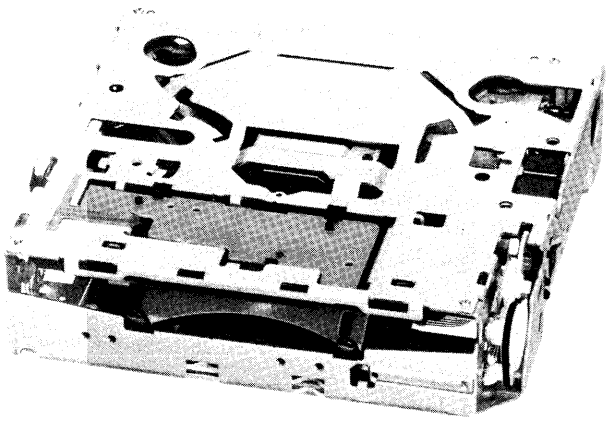
16249704

SERVICE MANUAL

E Model



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COMPACT DISC MECHANISM

SONY®

SERVICING NOTES

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

Laser Diode Properties
- Material: GaAlAs
- Wavelength: 780 nm
- Emission Duration: continuous
- Laser Output Power: less than 44.6 μW*

  * This output is the value measured at a distance of 200 mm from the objective lens surfase on the Optical Pick-up Block.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Flexible Circuit Board Repairing
- Keep the temperature of the soldering iron around 270 °C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

Notes on chip component replacement
- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

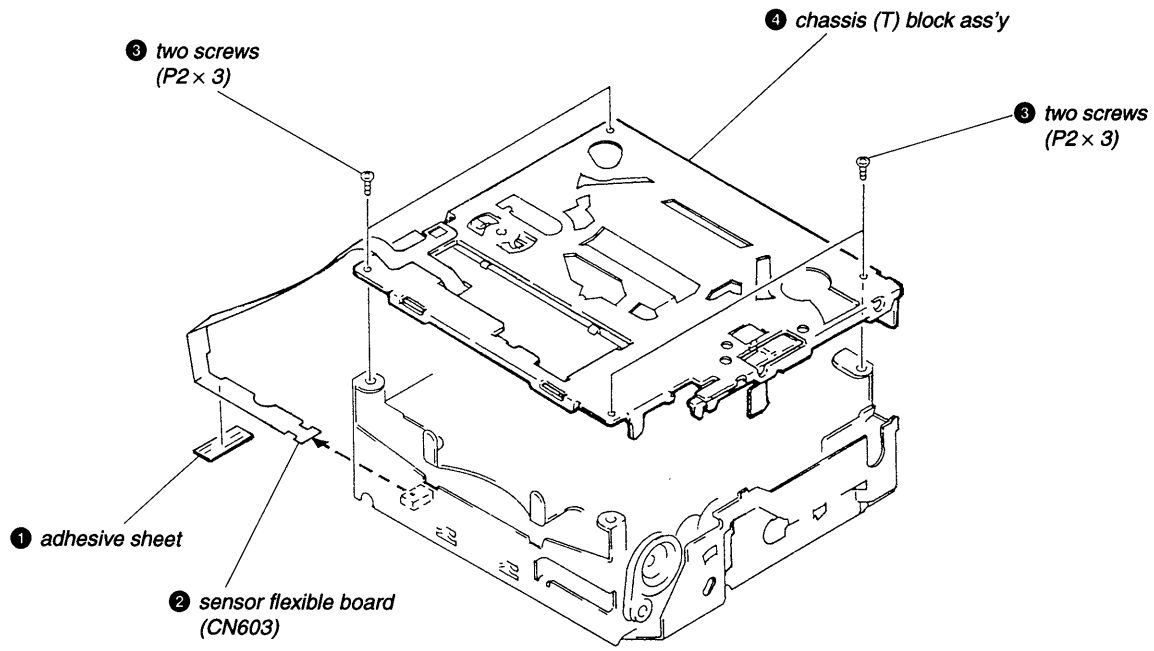
SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

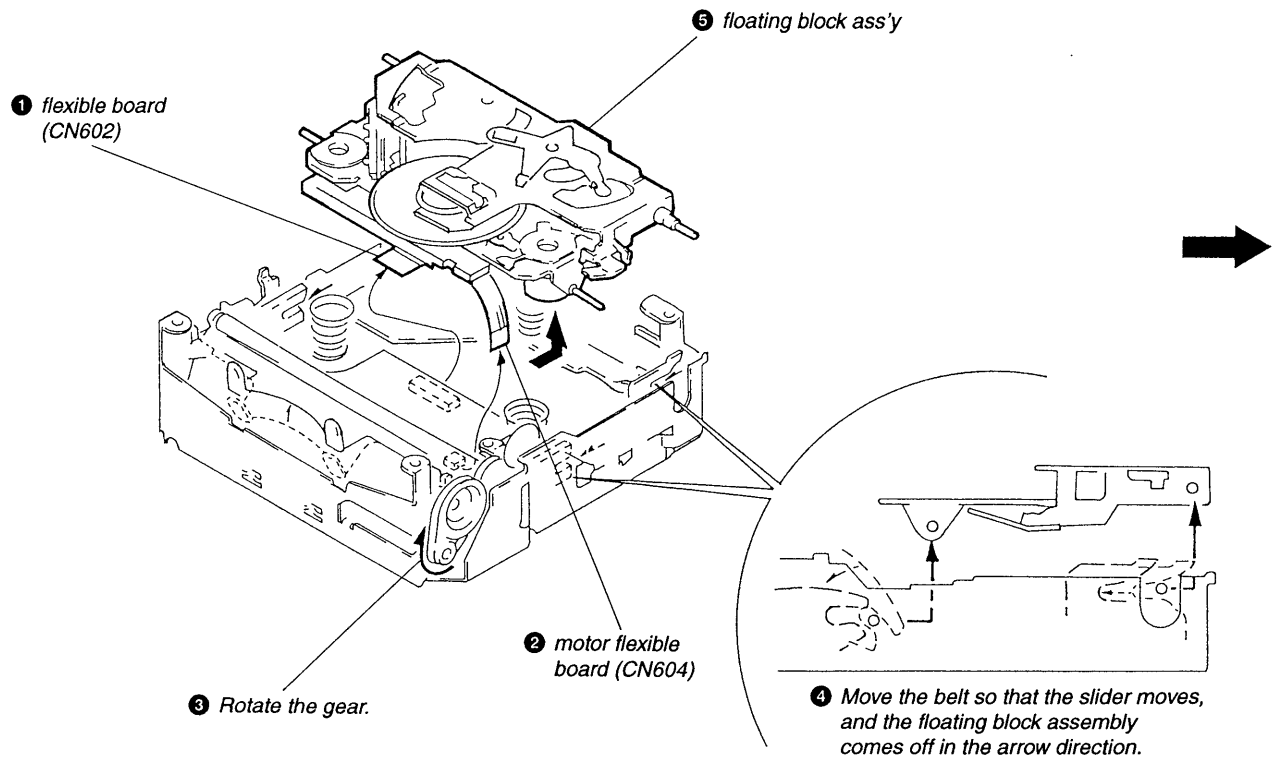
SECTION 1
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

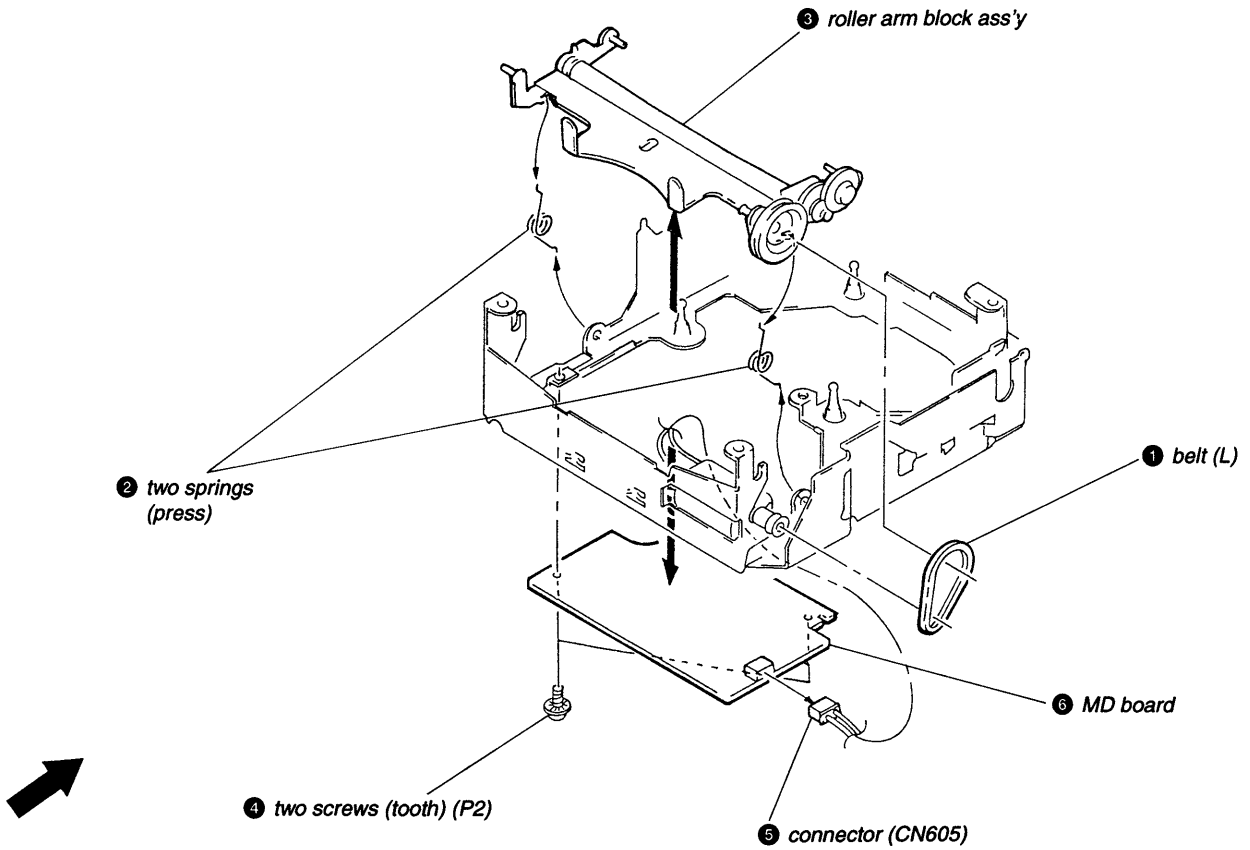
CHASSIS (T) BLOCK ASS'Y



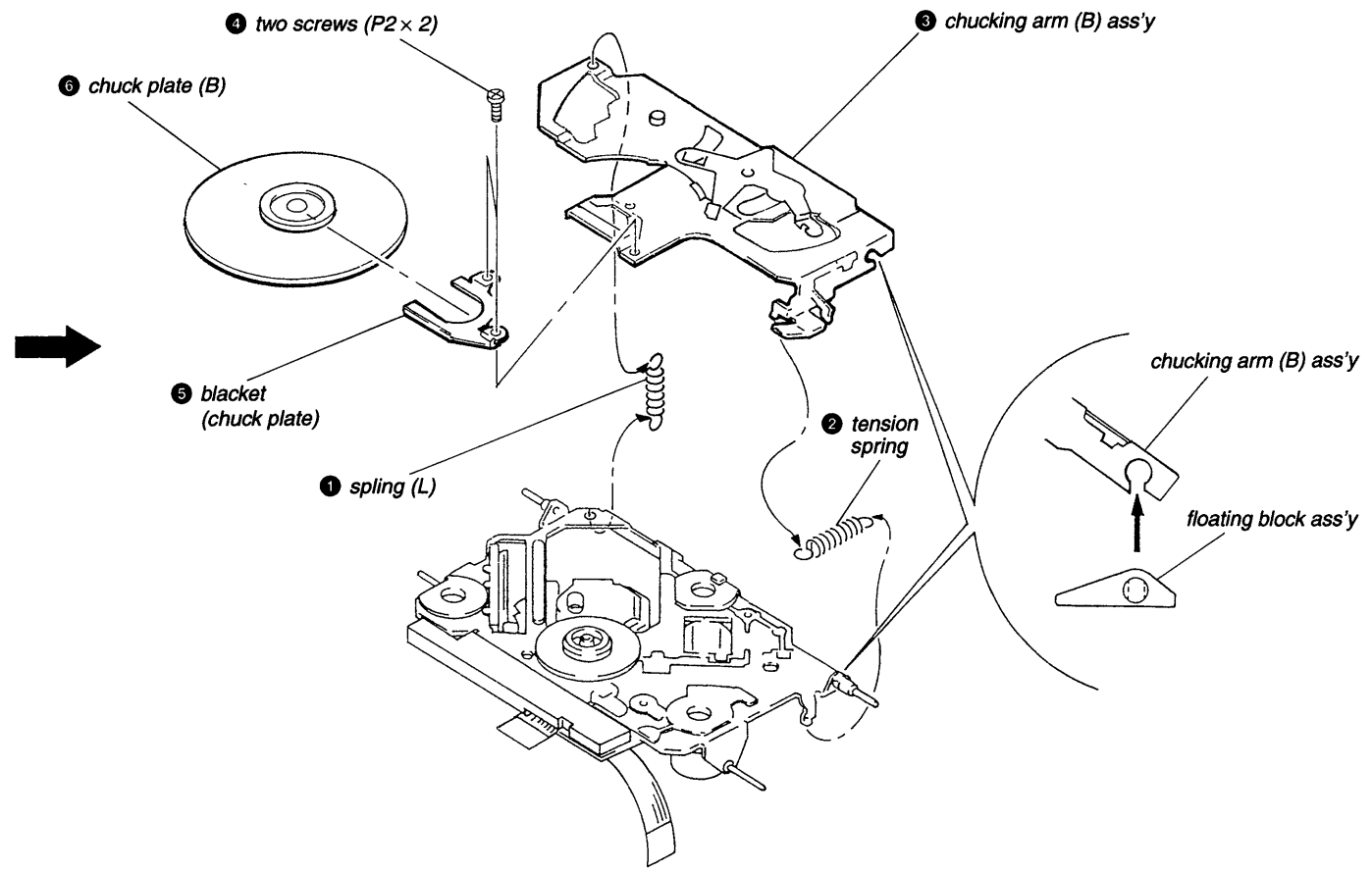
ROLLER ARM ASS'Y, MD BOARD


❺ floating block ass'y
❶ flexible board (CN602)
❷ motor flexible board (CN604)
❸ Rotate the gear.
❹ Move the belt so that the slider moves, and the floating block assembly comes off in the arrow direction.

ROLLER ARM BLOCK ASS'Y, MD BOARD



CHUCKING ARM (B) ASS'Y, CHUCK PLATE (B)


❹ two screws (P2 × 2)
❸ chucking arm (B) ass'y
❻ chuck plate (B)
chucking arm (B) ass'y
❺ blacket (chuck plate)
❷ tension spring
❶ spling (L)
floating block ass'y

SECTION 2
DIAGRAMS

2-1. IC PIN FUNCTION DESCRIPTION

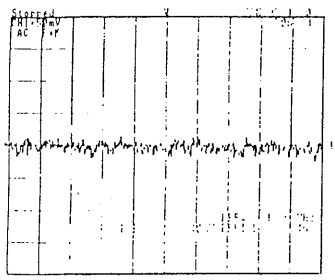
MD BOARD IC601 μPD78052GC-120-3B9 (SYSTEM CONTROL)

Pin No.	Pin Name	I/O	Function
1	PH21N	I	Disc detection
2	PH31N	I	Disc detection (Not used)
3	PH41N	I	Disc detection
4	AVSS	—	Analog system ground
5	FO	O	Focusing offset automatic adjustment signal output
6	—	—	Not used (OPEN)
7	AV REF1	I	Reference voltage for D/A converter
8	—	—	Not used (OPEN)
9	—	—	Not used (OPEN)
10	—	—	Not used (OPEN)
11	SQIN	I	SUB-Q 80 bit serial input
12	—	—	Not used (OPEN)
13	SQCK	O	SUB-Q Lead-in clock output
14	—	—	Not used (OPEN)
15	$\overline{\text{SRQ}}$	O	CD to Master control signal
16	D-MS-CD	I	Master to CD command data
17	D-CD-MS	O	CD to Master display data
18	SCK	I	Master to CD communication clock
19	—	—	Not used (OPEN)
20	—	—	Not used (OPEN)
21	—	—	Not used (OPEN)
22	—	—	Not used (OPEN)
23	—	—	Not used (OPEN)
24	—	—	Not used (OPEN)
25	—	—	Not used (OPEN)
26	—	—	Not used (OPEN)
27	GFS	I	Frame sync status flag (Guard Frame Sync)
28	FOK	I	Focus OK signal detection
29	—	—	Not used (OPEN)
30	—	—	Not used (OPEN)
31	POWER	O	System power ON/OFF control
32	D-MUTE	O	Mute ON/OFF control
33	VSS	—	Digital system ground
34	APC	O	Automatic power control for laser output (Automatic Power Control)
35	$\overline{\text{COMP ON}}$	O	Audio compressor ON/OFF control (Not used)
36	—	—	Not used (OPEN)
37	—	—	Not used (OPEN)
38	—	—	Not used (OPEN)
39	—	—	Not used (OPEN)
40	SLEDON	O	Sledding servo ON/OFF control

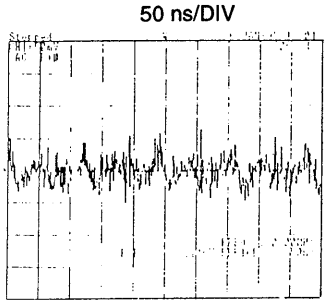
Pin No.	Pin Name	I/O	Function
41	—	—	Not used (OPEN)
42	—	—	Not used (OPEN)
43	—	—	Not used (OPEN)
44	ADJOK0	O	Automatic adjustment setting command monitor output (Not used)
45	ADJOK1	O	Automatic adjustment setting command monitor output (Not used)
46	ADJOK2	O	Automatic adjustment setting command monitor output (Not used)
47	ADJOK3	O	Automatic adjustment setting command monitor output (Not used)
48	FG0	O	Focusing gain automatic adjustment
49	FG1	O	Focusing gain automatic adjustment
50	FGG	O	Focusing gain automatic adjustment signal output
51	—	—	Not used (OPEN)
52	XRST	O	System reset ("L": reset)
53	DCLK	O	Serial data transfer clock
54	DDATA	O	Serial data output
55	DLAT	O	Latch data output
56	LMOT1	O	Loading motor control
57	LMOT2	O	Loading motor control
58	—	—	Not used (OPEN)
59	—	—	Not used (OPEN)
60	$\overline{\text{RESET}}$	I	Reset input ("L": reset)
61	SENS	I	SENS input
62	SLEEP	I	Sleep mode ON/OFF control (Fixed at "H")
63	CS	I	Master to CD control signal
64	SCOR	O	Sync signal at the beginning of frame sync (Subcoding Sync OR)
65	C. OUT	I	Counter signal for the number of tracks
66	—	—	Not used (OPEN)
67	—	—	Not used (OPEN)
68	VDD	—	+5 V power supply for digital system
69	X2	—	Main system clock (4.19 MHz)
70	X1	I	Main system clock (4.19 MHz)
71	IC	I	Internal connection (Normally, connected to ground)
72	—	—	Not used (OPEN)
73	—	—	Not used (OPEN)
74	AVDD	—	+5 V power supply for analog system
75	AV REF0	I	A/D converter reference voltage
76	—	—	Not used (OPEN)
77	INSW	—	Not used
78	LSW	I	Least disc track detection
79	DSW	I	Disc loading completion detection
80	PH11N	I	Disc detection

• **Waveforms**

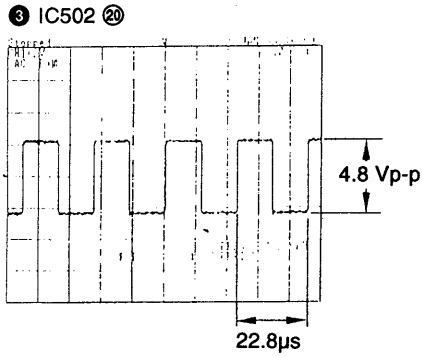
❶ IC501 ① 40 mV/DIV
24 ns/DIV



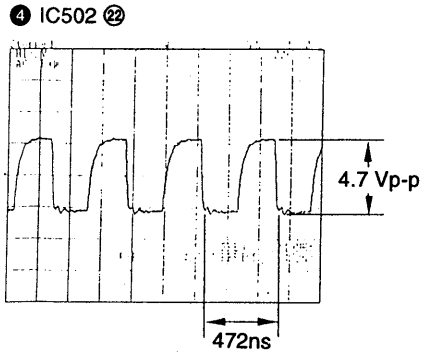
❷ IC502 ㊷ 114 mV/DIV
50 ns/DIV



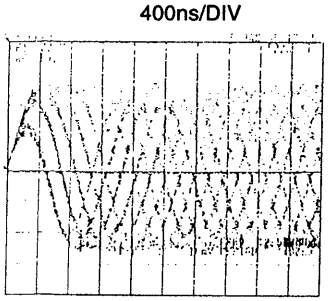
❸ IC502 ⑳



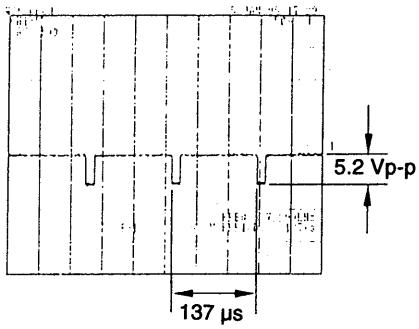
❹ IC502 ㉒



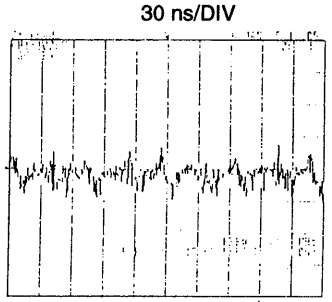
❺ IC501 ㉛ 16 mV/DIV
400ns/DIV



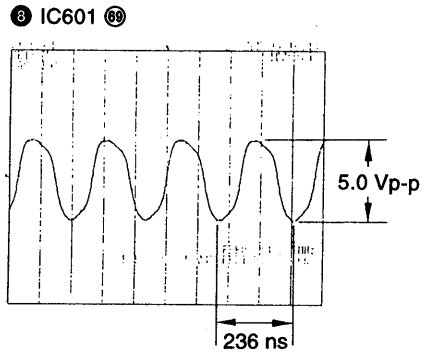
❻ IC502 ㉛



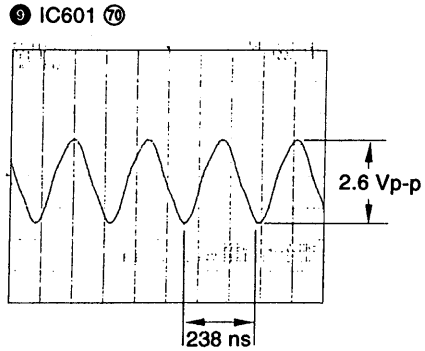
❼ IC502 ㉜ 172 mV/DIV
30 ns/DIV



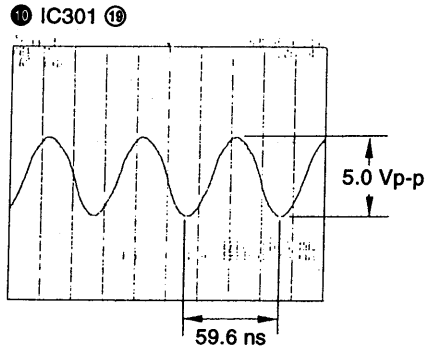
❽ IC601 ㊽



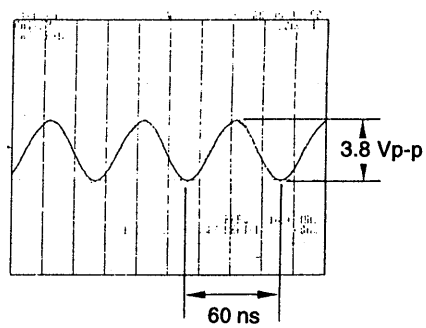
❾ IC601 ⑦⓪



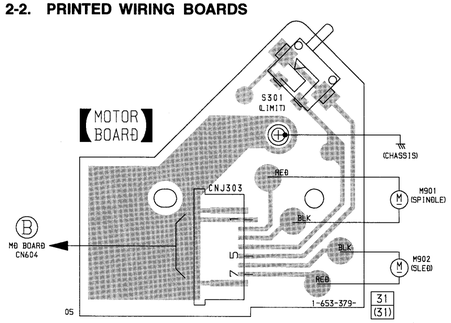
❿ IC301 ⑲



⓫ IC301 ⑯

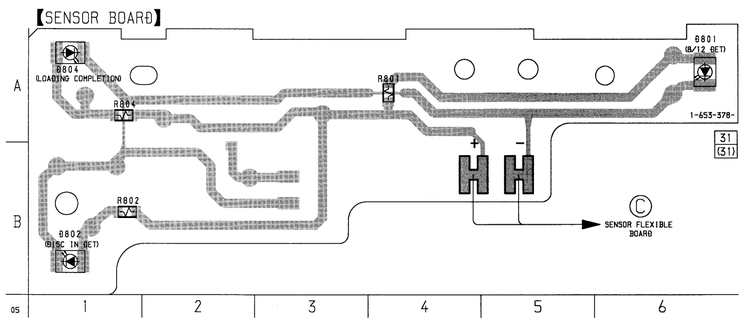


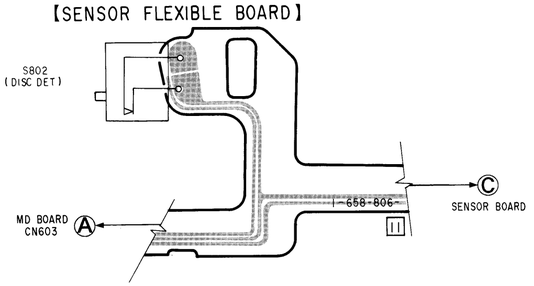
2-2. PRINTED WIRING BOARDS



• Semiconductor Location
SENSOR BOARD

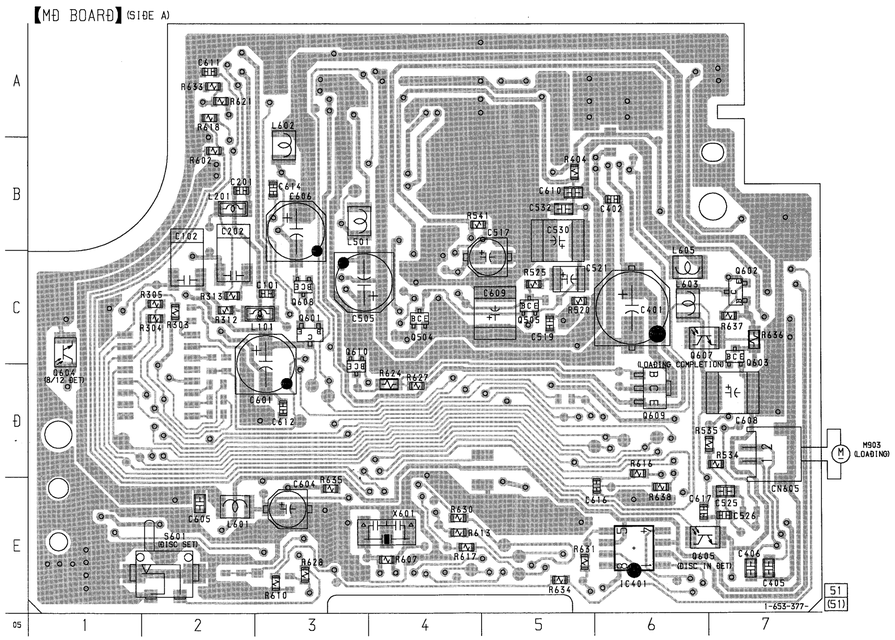
Ref. No.	Location
D801	A-6
D802	B-1
D804	A-1





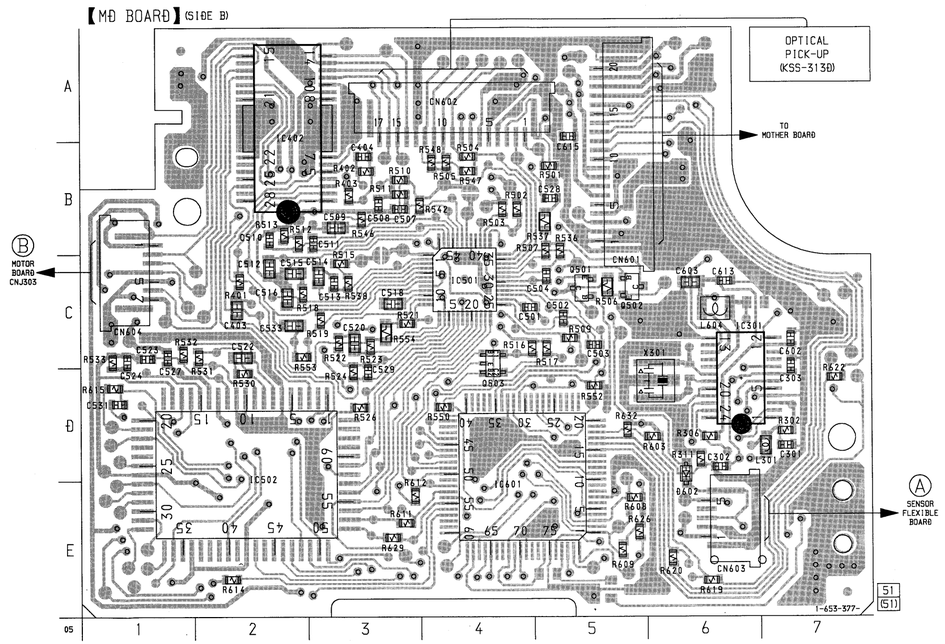
• Semiconductor Location
MD BOARD (SIDE A)

Ref. No.	Location
IC401	E-6
Q504	C-4
Q505	C-5
Q601	C-3
Q602	C-7
Q603	D-7
Q604	C-1
Q605	E-6
Q607	C-6
Q608	C-3
Q609	D-6
Q610	D-3



• Semiconductor Location
MD BOARD (SIDE B)

Ref. No.	Location
D602	D-6
IC301	D-6
IC402	A-2
IC501	C-4
IC502	E-2
IC601	E-4
Q501	C-5
Q502	C-5
Q503	D-4



Note on Printed Wiring Board:

- △ : internal component.
- ▒▒ : Pattern from the side which enables seeing.

(The other layers' patterns are not indicated.)

Caution:
Pattern face side: (Side B) Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Side A) Parts on the parts face side seen from the parts face are indicated.

NOTE

- All capacitors are in μF unless otherwise noted. pF: μμF
  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △ : internal component.
- B+ : B+ Line.
- Voltages and waveforms are dc with respect to ground under no-signal conditions. no mark:PLAY
- Voltages are taken with a VOM (input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Power voltage is fed with jig.
- Signal path.
  ⇨ : CD

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

【MD BOARD】

【SENSOR FLEXIBLE BOARD】

【SENSOR BOARD】

【MOTOR BOARD】

【MOTOR FLEXIBLE BOARD】

⚠ OPTICAL PICK-UP (KSS-313D)

IC501 SERVO CONTROL RF AMP CXA2523AR

IC502 DIGITAL SIGNAL PROCESSOR CXD2599AR

IC601 SYSTEM CONTROL

IC301 D/A CONVERTER

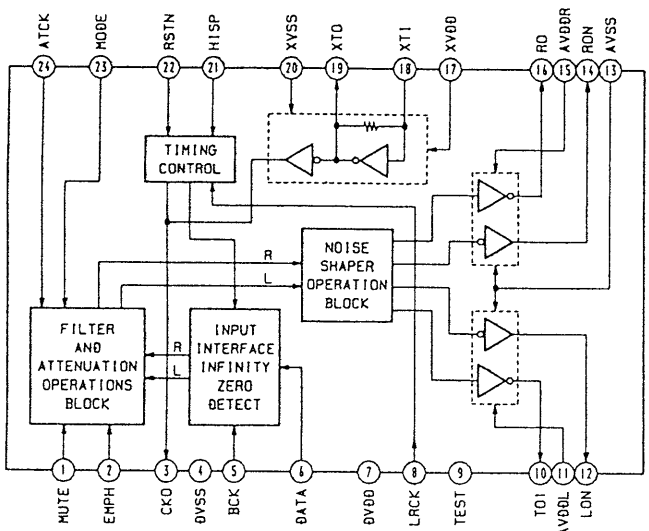
IC402 MECHA DRIVE

IC401 LOADING MOTOR DRIVE

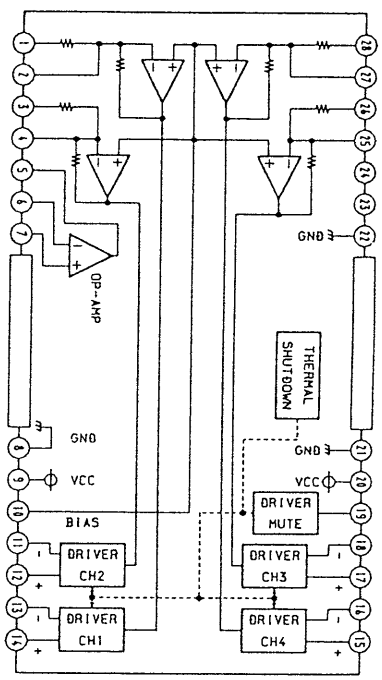
TO MOTHER BOARD

• **IC Block Diagrams**

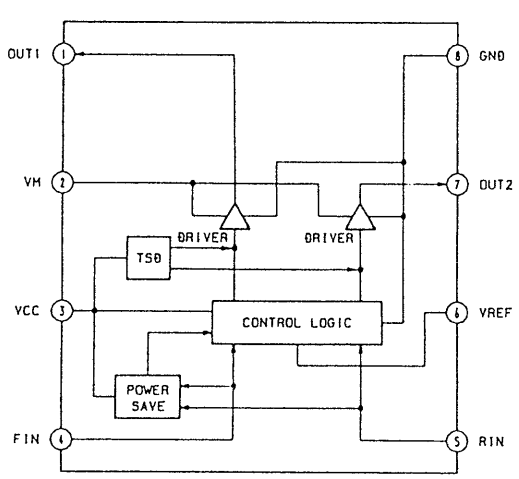
IC301 SM5875AM-ET



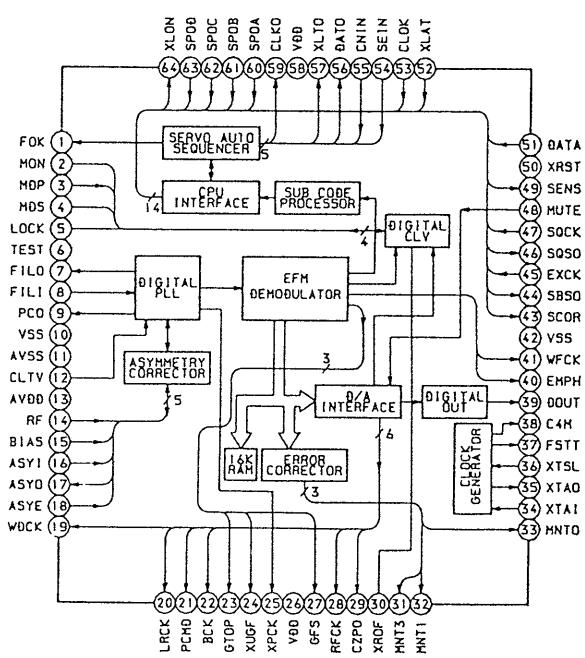
IC402 BA63934FP



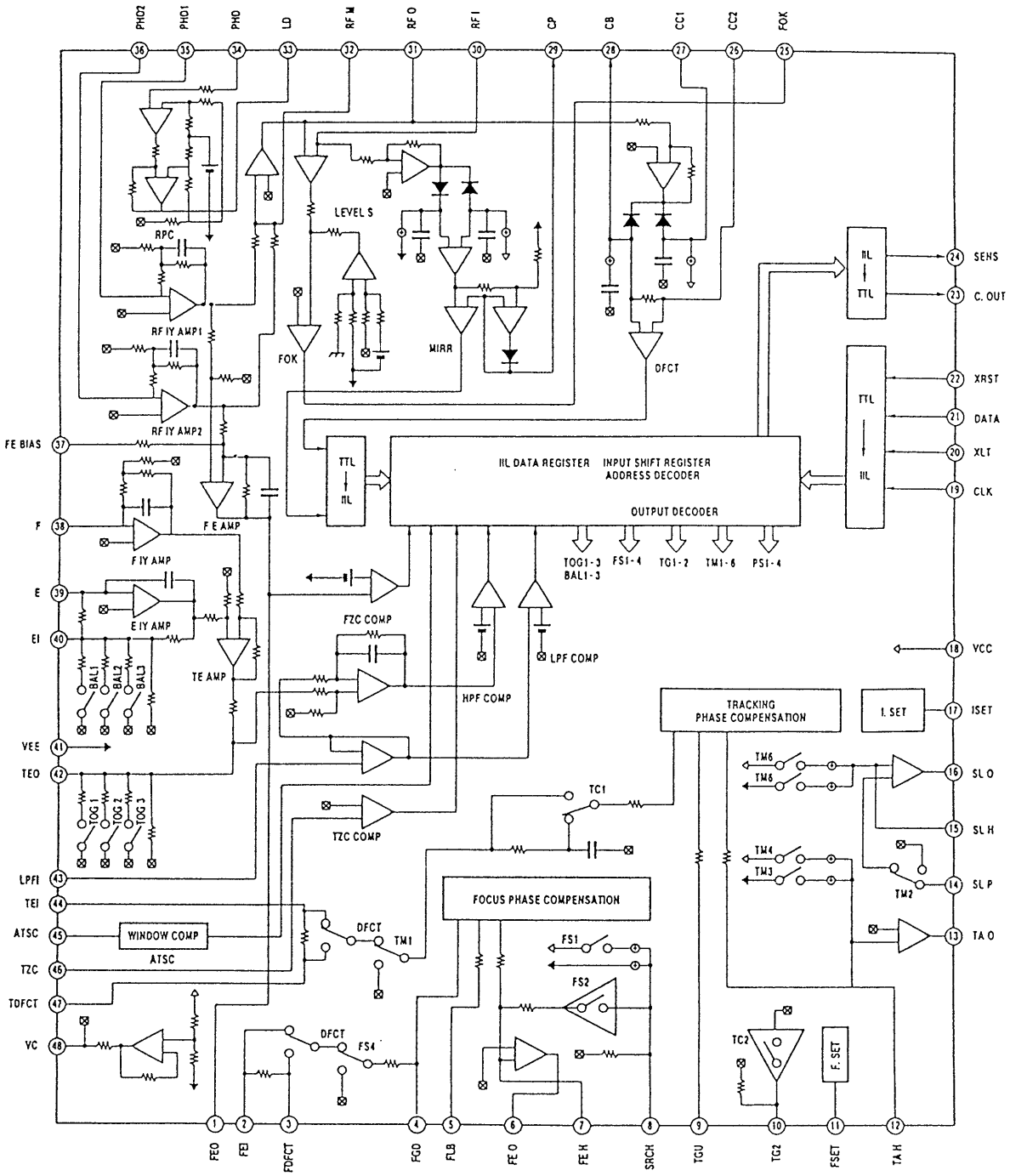
IC401 BA6287F



IC502 CXD2507AQ



IC501 CXA1782BR



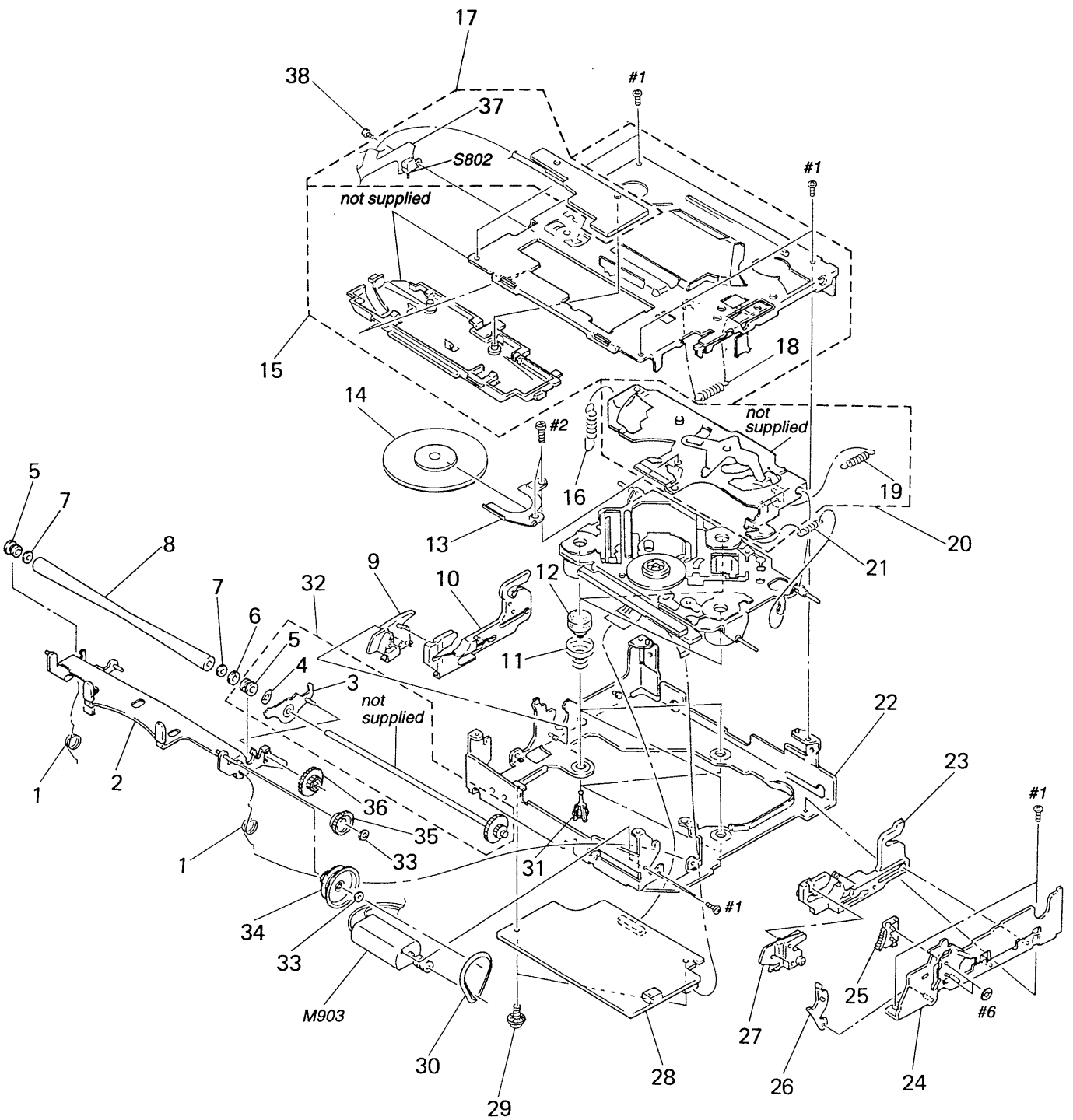
SECTION 3
EXPLODED VIEWS

NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearrance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of the electrical parts list.

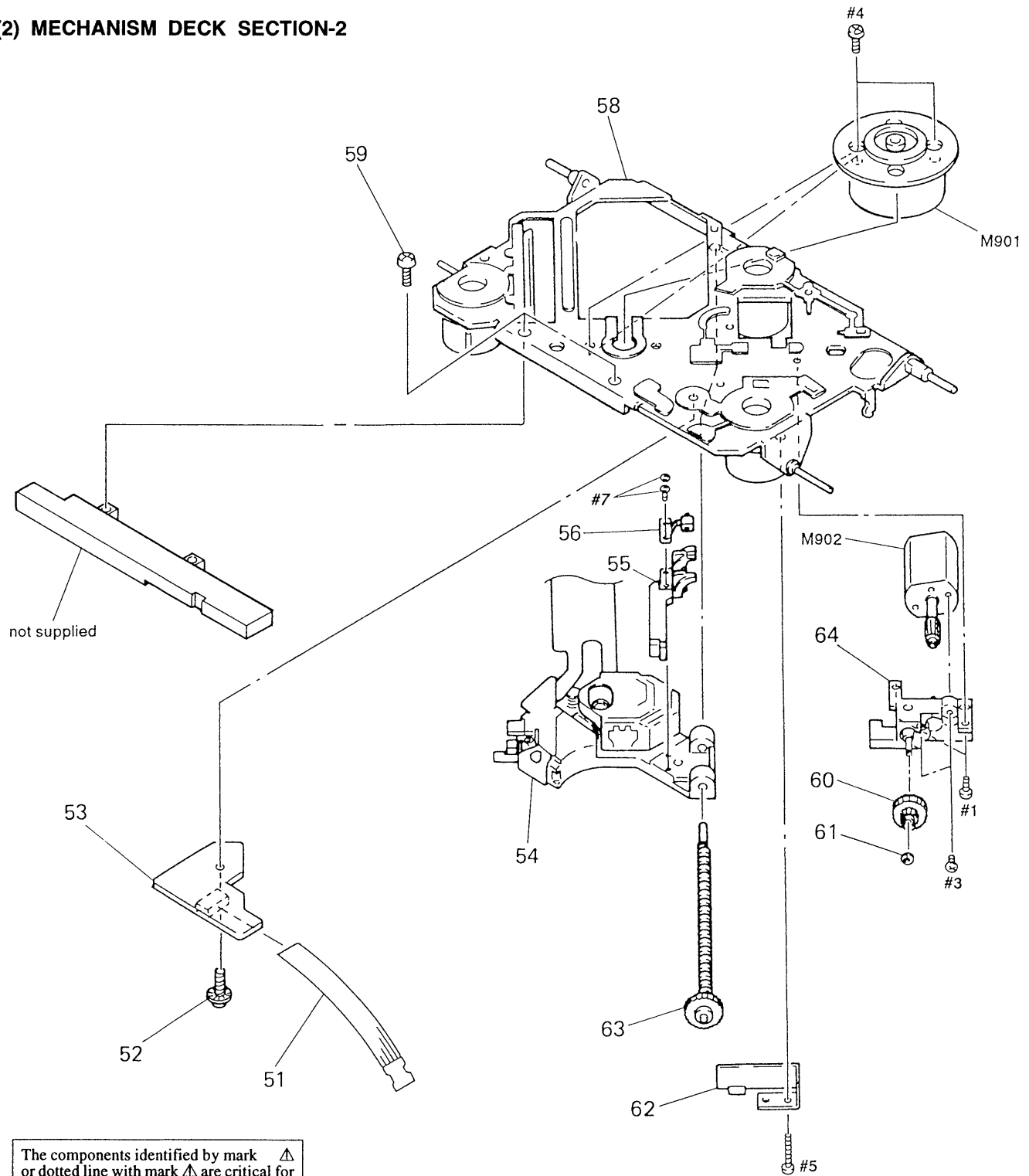
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

(1) MECHANISM DECK SECTION-1



Ref. No.	Part No.	Description	Remark
1	3-384-900-01	SPRING (PRESS)	
* 2	X-3366-857-1	ARM ASSY, ROLLER	
3	X-3366-858-4	ARM ASSY, FRICTION	
4	3-384-899-01	SPRING (FRICTION)	
5	3-384-892-01	BEARING (ROLLER)	
6	3-386-150-01	RING (ROLLER), RETAINING	
7	3-701-438-11	WASHER, 2.5	
8	3-909-408-01	ROLLER (T2)	
9	3-384-887-01	LEVER (L)	
10	3-925-528-01	SLIDER (L2)	
11	3-907-588-11	SPRING (FL2)	
12	3-384-914-12	DAMPER	
13	3-925-530-01	BRACKET (CHUCK PLATE)	
14	3-925-532-02	PLATE (B), CHUCK	
* 15	X-3373-377-1	CHASSIS (T3) ASSY	
16	3-928-921-01	SPRING (L)	
* 17	A-3294-217-A	SENSOR BOARD, COMPLETE	
18	3-906-921-01	SPRING, TENSION	
19	3-906-936-02	SPRING, TENSION	
20	X-3373-337-1	ARM (B) ASSY, CHUCKING	
21	3-925-556-01	SPRING (CH)	
* 22	X-3370-529-1	CHASSIS (M2) ASSY	
* 23	X-3370-531-1	SLIDER (R2) ASSY	
* 24	X-3370-530-1	CHASSIS (R2) ASSY	
25	3-922-848-01	GEAR (RACK)	
26	3-906-940-01	LEVER (ST2)	
27	3-384-889-01	LEVER (R)	
* 28	A-3309-849-A	MD BOARD, COMPLETE	
29	3-918-103-01	SCREW (TOOTH) (+P2)	
30	3-387-776-01	BELT (L)	
31	3-384-923-01	SHAFT (DAMPER)	
32	A-3252-591-A	GEAR ASSY, ROLLER	
33	3-578-242-11	WASHER	
34	3-384-894-01	GEAR (R1)	
35	3-384-895-01	GEAR (R2)	
36	3-922-847-01	GEAR (DOWN)	
37	1-658-806-11	SENSOR FLEXIBLE BOARD	
38	3-924-939-11	SCREW	
M903	A-3291-374-A	MOTOR ASSY (LOADING)	
S802	1-692-441-11	SWITCH, MICROPHONE (DISC DET)	

(2) MECHANISM DECK SECTION-2



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
51	1-653-376-11	MOTOR FLEXIBLE BOARD	
52	3-918-103-11	SCREW (TOOTH) (+P2)	
* 53	1-653-379-31	MOTOR BOARD	
⚠54	8-848-459-11	OPTICAL PICK-UP KSS-313D/J-RP	
55	3-384-922-01	GEAR (SL FEED)	
56	3-384-920-11	RETAINER (SL FEED)	
* 58	X-3373-379-1	CHASSIS (OPT) ASSY (OUTSERT)	
59	3-924-939-11	SCREW	
60	3-384-912-11	GEAR (K2)	
61	3-570-615-02	POLY-WASHER (DIA. 1. 2)	
62	3-384-913-11	SPRING (THRUST RETAINER)	
63	A-3291-552-A	SHAFT (SL) ASSY	
64	X-3366-100-1	BASE (DRIVING) ASSY	
M901			
M902	A-3252-585-A	MOTOR (SL) ASSY (SLED)	

MD

SECTION 4
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F: nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service.
  Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA. . : μA. . uPA. . : μPA. .
  uPB. . : μPB. . uPC. . : μPC. .
  uPD. . : μPD. .
- CAPACITORS
  uF: μF
- COILS
  uH: μH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
*	A-3309-849-A	MD BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C101	1-164-676-11	CERAMIC CHIP	2200PF	5%	16V
C102	1-128-309-11	ELECT	4.7uF	20%	6.3V
C201	1-164-676-11	CERAMIC CHIP	2200PF	5%	16V
C202	1-128-309-11	ELECT	4.7uF	20%	6.3V
C301	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C302	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C303	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C401	1-128-391-11	ELECT	330uF	20%	6.3V
C402	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C403	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C404	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C405	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C406	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C501	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C502	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C503	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C504	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C505	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C507	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C508	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C509	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C510	1-164-471-11	CERAMIC CHIP	680PF	5%	50V
C511	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C512	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C513	1-164-357-11	CERAMIC CHIP	1000PF	5%	50V
C514	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C515	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C516	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C517	1-126-603-11	ELECT CHIP	4.7uF	20%	35V
C518	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C519	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C520	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C521	1-135-216-11	TANTALUM CHIP	10uF	20%	10V
C522	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C523	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V
C524	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C525	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C526	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C527	1-164-173-11	CERAMIC CHIP	0.0039uF	10%	50V
C528	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C529	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C530	1-135-166-21	TANTALUM CHIP	47uF	10%	10V
C531	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C532	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C533	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C601	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C602	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C603	1-163-025-11	CERAMIC CHIP	0.001uF		50V
C604	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C605	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C606	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C608	1-135-166-21	TANTALUM CHIP	47uF	10%	10V
C609	1-135-166-21	TANTALUM CHIP	47uF	10%	10V
C610	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C611	1-164-676-11	CERAMIC CHIP	2200PF	5%	16V
C612	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C613	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C614	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C615	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C616	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C617	1-164-156-11	CERAMIC CHIP	0.1uF		25V
		< CONNECTOR >			
CN601	1-764-726-11	CONNECTOR, FPC 20P			
CN602	1-766-491-11	CONNECTOR, FPC 17P			
CN603	1-774-417-11	CONNECTOR, FPC 5P			
CN604	1-770-345-21	CONNECTOR, FPC 7P			

MD

Ref. No.	Part No.	Description	Remark
CN605	1-580-055-21	PIN, CONNECTOR 2P	
		< DIODE >	
D602	8-719-988-62	DIODE 1SS355	
		< IC >	
IC301	8-759-283-60	IC SM5875AM-ET	
IC401	8-759-040-83	IC BA6287F	
IC402	8-759-188-68	IC BA6394FP	
IC501	8-752-068-53	IC CXA1782BR	
IC502	8-752-372-94	IC CXD2507AQ	
IC601	8-759-457-82	IC uPD78052GC-120-3B9	
		< COIL >	
L101	1-543-813-21	FILTER, EMI	
L201	1-543-813-21	FILTER, EMI	
L301	1-410-999-11	INDUCTOR CHIP 3.3uH	
L501	1-412-058-11	INDUCTOR CHIP 10uH	
L601	1-412-058-11	INDUCTOR CHIP 10uH	
L602	1-412-058-11	INDUCTOR CHIP 10uH	
L603	1-412-058-11	INDUCTOR CHIP 10uH	
L604	1-412-058-11	INDUCTOR CHIP 10uH	
L605	1-412-058-11	INDUCTOR CHIP 10uH	
		< TRANSISTOR >	
Q501	8-729-904-60	TRANSISTOR DTB113ZK	
Q502	8-729-141-48	TRANSISTOR 2SB624-BV345	
Q503	8-729-902-93	TRANSISTOR FMG4	
Q504	8-729-905-57	TRANSISTOR DTA124EU	
Q505	8-729-905-61	TRANSISTOR DTC124EU	
Q601	8-729-904-60	TRANSISTOR DTB113ZK	
Q602	8-729-141-48	TRANSISTOR 2SB624-BV345	
Q603	8-729-905-61	TRANSISTOR DTC124EU	
Q604	8-729-032-35	PHOTO TRANSISTOR CPT-230S-C-TU	(8/12 DET)
Q605	8-729-032-35	PHOTO TRANSISTOR CPT-230S-C-TU	(DISC IN DET)
Q607	8-729-032-35	PHOTO TRANSISTOR CPT-230S-C-TU	(LOADING COMPLETION)
Q608	8-729-905-61	TRANSISTOR DTC124EU	
Q609	8-729-820-61	TRANSISTOR 2SB1124-T	
Q610	8-729-905-61	TRANSISTOR DTC124EU	
		< RESISTOR >	
R302	1-216-815-11	METAL CHIP 330 5% 1/16W	
R303	1-216-864-11	METAL CHIP 0 5% 1/16W	
R304	1-216-864-11	METAL CHIP 0 5% 1/16W	
R305	1-216-864-11	METAL CHIP 0 5% 1/16W	
R306	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R311	1-216-797-11	METAL CHIP 10 5% 1/16W	
R312	1-216-809-11	METAL CHIP 100 5% 1/16W	
R313	1-216-809-11	METAL CHIP 100 5% 1/16W	
R401	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R402	1-216-849-11	METAL CHIP 220K 5% 1/16W	
R403	1-216-846-11	METAL CHIP 120K 5% 1/16W	
R404	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R501	1-216-797-11	METAL CHIP 10 5% 1/16W	
R502	1-218-740-11	METAL CHIP 100K 0.50% 1/16W	
R503	1-218-740-11	METAL CHIP 100K 0.50% 1/16W	
R504	1-218-732-11	METAL CHIP 47K 0.50% 1/16W	
R505	1-218-732-11	METAL CHIP 47K 0.50% 1/16W	
R506	1-216-001-00	METAL CHIP 10 5% 1/10W	
R507	1-218-716-11	METAL CHIP 10K 0.50% 1/16W	
R509	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R510	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R511	1-216-847-11	METAL CHIP 150K 5% 1/16W	
R512	1-216-853-11	METAL CHIP 470K 5% 1/16W	
R513	1-216-848-11	METAL CHIP 180K 5% 1/16W	
R515	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R516	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R517	1-216-836-11	METAL CHIP 18K 5% 1/16W	
R518	1-216-855-11	METAL CHIP 680K 5% 1/16W	
R519	1-220-372-11	METAL GLAZE 200K 5% 1/16W	
R520	1-218-273-11	METAL GLAZE 510K 5% 1/16W	
R521	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R522	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R523	1-216-851-11	METAL CHIP 330K 5% 1/16W	
R524	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R525	1-216-843-11	METAL CHIP 68K 5% 1/16W	
R526	1-216-849-11	METAL CHIP 220K 5% 1/16W	
R530	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
R531	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
R532	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R533	1-216-856-11	METAL CHIP 820K 5% 1/16W	
R534	1-218-748-11	METAL CHIP 220K 0.50% 1/16W	
R535	1-218-716-11	METAL CHIP 10K 0.50% 1/16W	
R536	1-218-715-11	METAL CHIP 9.1K 0.50% 1/16W	
R537	1-216-681-11	METAL CHIP 18K 0.5% 1/10W	
R538	1-216-836-11	METAL CHIP 18K 5% 1/16W	
R541	1-216-836-11	METAL CHIP 18K 5% 1/16W	
R542	1-216-834-11	METAL CHIP 12K 5% 1/16W	
R546	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R547	1-218-732-11	METAL CHIP 47K 0.50% 1/16W	
R548	1-218-732-11	METAL CHIP 47K 0.50% 1/16W	
R550	1-216-864-11	METAL CHIP 0 5% 1/16W	
R552	1-216-864-11	METAL CHIP 0 5% 1/16W	
R553	1-220-372-11	METAL GLAZE 200K 5% 1/16W	
R554	1-216-295-00	CONDUCTOR, CHIP (2012)	

MD | MOTOR | SENSOR | SENSOR FLEXIBLE

Ref. No.	Part No.	Description			Remark
R602	1-216-837-11	METAL CHIP	22K	5%	1/16W
R603	1-216-837-11	METAL CHIP	22K	5%	1/16W
R607	1-216-857-11	METAL CHIP	1M	5%	1/16W
R608	1-216-850-11	METAL CHIP	270K	5%	1/16W
R609	1-216-850-11	METAL CHIP	270K	5%	1/16W
R610	1-216-837-11	METAL CHIP	22K	5%	1/16W
R611	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R612	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R613	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R614	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R615	1-216-809-11	METAL CHIP	100	5%	1/16W
R616	1-216-809-11	METAL CHIP	100	5%	1/16W
R617	1-216-809-11	METAL CHIP	100	5%	1/16W
R618	1-216-815-11	METAL CHIP	330	5%	1/16W
R619	1-216-815-11	METAL CHIP	330	5%	1/16W
R620	1-216-815-11	METAL CHIP	330	5%	1/16W
R621	1-216-815-11	METAL CHIP	330	5%	1/16W
R622	1-216-815-11	METAL CHIP	330	5%	1/16W
R624	1-216-037-00	METAL CHIP	330	5%	1/10W
R626	1-216-853-11	METAL CHIP	470K	5%	1/16W
R627	1-216-819-11	METAL CHIP	680	5%	1/16W
R628	1-216-837-11	METAL CHIP	22K	5%	1/16W
R629	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R630	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R631	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R632	1-216-837-11	METAL CHIP	22K	5%	1/16W
R633	1-216-837-11	METAL CHIP	22K	5%	1/16W
R634	1-216-821-11	METAL CHIP	1K	5%	1/16W
R635	1-216-809-11	METAL CHIP	100	5%	1/16W
R636	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R637	1-216-833-11	METAL CHIP	10K	5%	1/16W
R638	1-216-809-11	METAL CHIP	100	5%	1/16W
		< SWITCH >			
S601	1-571-754-31	SWITCH, PUSH (1 KEY) (DISC SET)			
		< VIBRATOR >			
X301	1-760-401-11	VIBRATOR, CERAMIC (16.93MHz)			
X601	1-579-063-21	VIBRATOR, CERAMIC (4.19MHz)			

****

* 1-653-379-31 MOTOR BOARD
****

< CONNECTOR >

CNJ303 1-770-348-21 CONNECTOR, FPC 7P

Ref. No.	Part No.	Description	Remark
		< SWITCH >	
S301	1-571-754-31	SWITCH, PUSH (1 KEY) (LIMIT)	

****

* A-3294-217-A SENSOR BOARD, COMPLETE
****
(Included SENSOR FLEXIBLE BOARD)

< DIODE >

D801	8-719-045-75	DIODE CL-200IR-X-TU	(8/12 DET)
D802	8-719-045-75	DIODE CL-200IR-X-TU	(DISC IN DET)
D804	8-719-045-75	DIODE CL-200IR-X-TU	(LOADING COMPLETION)

< RESISTOR >

R801	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R802	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R804	1-216-049-11	METAL GLAZE	1K	5%	1/10W

****

1-658-806-11 SENSOR FLEXIBLE BOARD
****

< SWITCH >

S802 1-692-441-11 SWITCH, MICROPHONE (DISC DET)

****

MISCELLANEOUS
****

51	1-653-376-11	MOTOR FLEXIBLE BOARD
⚠54	8-848-459-11	OPTICAL PICK-UP KSS-313D/J-RP
M901		
M902	A-3252-585-A	MOTOR (SL) ASSY (SLED)
M903	A-3291-374-A	MOTOR ASSY (LOADING)

****

****
HARDWARE LIST
****

#1	7-627-553-37	SCREW, PRECISION +P 2X3
#2	7-627-553-18	SCREW, PRECISION +P 2X2
#3	7-627-553-67	SCREW, PRECISION +P 2X5
#4	7-627-552-07	SCREW, PRECISION +P 1.7X2.5
#5	7-621-772-60	SCREW +B 2X12
#6	7-624-200-11	NUT, PUSH 2
#7	7-627-852-17	SCREW

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